## REMARKS

Claim 13 has been amended to remove the reference to barium. Claim 20 has been amended such that it is no longer dependant upon Claim 13.

## DETAILED ACTION

### *Claim Rejections - 35 USC 102*

The Examiner has rejected Claim 13 and 20 as being anticipated by Fukuda {Bull.Chem.Soc Japan (1958), 31, pp. 343-7} because Fukuda discloses a hydrogenation catalyst comprised of a Group IIA metal support (barium carbonate) and a noble metal (Palladium)(see Tables I and II).

Claim 13 has been amended such that it no longer refers to barium carbonate. Claim 20 covers a hydrogenation catalyst which comprises 1% $Pd/BaCO_3$. Fukuda discloses only catalysts which comprise 3% $Pd/BaCO_3$ (see Fig. 2) and 3.5% $Pd/BaCO_3$ (Fig. 5). Fukuda does not provide a disclosure of a catalyst comprising 1% $Pd/BaCO_3$.

The Applicants submit that Claim13 (as amended) and Claim 20 are not anticipated by Fukuda. .

The Examiner has rejected Claims 14 and 22 as being anticipated by Crombie et al {J.Chem.Soc. (1950), pp.1707-14} because Crombie et al discloses a hydrogentation catalyst comprised of a Group IIA metal support (calcium carbonate) and a noble metal (Platinum) (see abstract; $PtCaCO_3$ hydrogentation catalyst).

Claim 14 covers an hydrogenation catalyst comprising between 0.2 to 10% by weight of platinum. Claim 22 covers a hydrogenation catalyst which comprises 1% $Pt/CaCO_3$.

Crombie et al provides no disclosure of a hydrogenation catalyst with a platinum loading within this specific range nor does it disclose a catalyst with a 1% by weight loading of platinum.

The Applicants submit that Claim14 and Claim 22 are not anticipated by Crombie et al.

The Examiner has rejected Claims 13 and 19 as being anticipated by Ring et al {DD 294488} because Ring et al discloses an hydrogenation catalyst comprised of a Group IIA metal support (magnesium carbonate) and a noble metal (Palladium) (see abstract; Pd-$MgCO_3$ hydrogentation catalyst).

Claim 13 (as amended) covers an hydrogenation catalyst comprising between 0.2 to 10% by weight of palladium. Claim 19 covers an hydrogenation catalyst comprising 1% Pd/$MgCO_3$. Ring et al provides no disclosure of a hydrogenation catalyst with a palladium loading within this specific range nor does it disclose a catalyst with a 1% by weight loading of palladium.

The Applicants submit that Claim 13 and Claim 19 are not anticipated by Ring et al.

***Claim Rejections -35 USC 103***

The Examiner has rejected Claims 12-14 and 21-23 as being unpatentable over Chaudhari et al {US Pat. 5, 650, 546}, in view of Browning et al {US Pat. 3, 901, 822}.

Chaudhari et al describes a process for the hydrogenation of organic compounds using a water soluble catalyst (see abstract). The homogeneous catalysts used in the process consist

of water soluble metal complexes prepared from group VIIIA metals (e.g. nickel, iron, cobalt, palladium, rhodium, ruthenium, iridium and osmium) or complexes of said elements or compounds containing group VIIIA elements (e.g. platinum metal carbonates, halides, sulphates, hydroxides, chlorates) (see column 4 lines 6-12). Chaudhari et al does not provide a disclosure of any supported catalysts. In particular the disclosure of "platinum metal carbonates" is not a disclosure of a platinum catalyst with a metal carbonate support but merely the mention of a suitable compound containing a group VIIIA element.

Browning et al provides a general disclosure of noble metal hydrogenation catalysts, namely a catalyst which comprises anyone of the following metals palladium; platinum; rubidium; rodium and iridium. These catalysts may be supported or unsupported. Wherein the catalyst is supported on a carrier that carrier may be anyone of alumina, silica gel, carbon, magnesium carbonate, dolomite and the like (see column 2 lines 26-34). The only specific catalyst described in Browning et al is a 0.3% by weight platinum catalyst supported on an alumina carrier (see examples).

The Examiner alleges that a person having ordinary skill in the art would arrive at the present invention on consideration of the teachings of Chaudhari et al and Browning et al because Chaudhari discloses a hydrogenation catalyst such a platinum metal carbonate and Browning et al teach noble metal hydrogenation catalysts wherein the metals are selected from platinum or palladium and the said metals are supported on metal carbonates (such as magnesium carbonate and the like).

However to establish a ***prima facie*** case of obviousness three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the

reference or to combine reference teachings. Second there must be reasonable expectation of success. Finally, the prior art reference (or references combined) must teach or suggest all the claim limitations.

Firstly the Applicants submit there is no motivation to combine the prior art references. This is because the homogeneous catalysts described in Chaudhari et al do not require supports.

Secondly even if one of ordinary skill in the art would be motivated to modify the teachings of the prior art the Applicants submit that there would be no expectation of success because neither of these references are directed to the manufacture of catalysts for selectively hydrogenating a 1,4 butynediol to a 1,4 butenediol.

Finally "[A] reference must be considered not only for what it expressly teaches, but also for what it fairly suggests." (see In re Baird 29USPQ2d 1550, 1552 (Fed. Cir. 1994)).

The Applicants submit that Chaudhari et al provides no disclosure of a supported catalyst and Browning et al teaches catalysts wherein the metal can be selected from any noble metal and any number of suitable supports (if indeed a support is employed).

Consequently neither Chaudhari et al nor Browning et al, either alone or in combination, teach or suggest all the claim limitations because there is no specific disclosure of a catalyst comprising a support selected from a salt of a Group II metal with a loading of between 0.2%-10% of platinum or palladium.

Consequently the Applicants believe the present invention is both novel and non

obvious over the cited art.

Therefore, it is respectfully requested that the rejection be withdrawn.

Applicants submit that the present application is in condition for allowance and favorable consideration is respectfully requested.

Respectfully submitted

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